A GENERALIZTION OF FUZZY LAPLACE AND FUZZY YANG TRANSFROM: FUZZY SHEHU TRANSFORM WITH APPLICATIONS TO ORDINARY AND FRACTIONAL DIFFERENTIAL EQUATIONS

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ABSTRACT. In this article, we propose a novel fuzzy transform called fuzzy Shehu transform for the first time in the literature which is the generalization of fuzzy Laplace and fuzzy Yang transfrom. We derive some basic properties of fuzzy Shehu transform. We deduce results for derivative of a fuzzy valued function under strongly generalized differentiability. Also, fuzzy Shehu transform is utilized to derive results for the fractional derivatives for the first time. The proposed transform is used to solve fuzzy ordinary, partial and fractional differential equations. We give some examples to illustrate the novel method.

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